Re-purposed Power Supply Fume Extractor

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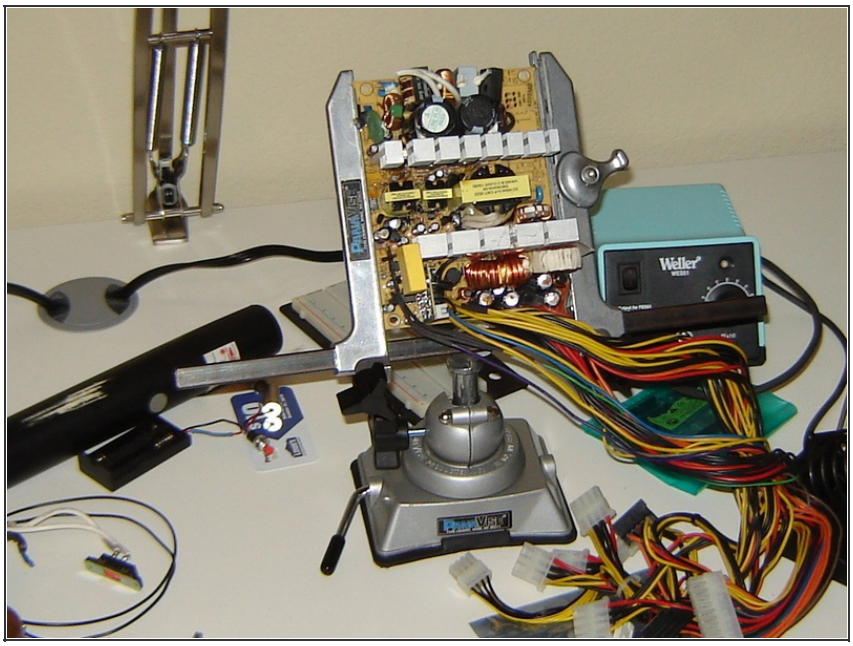
SUMMARY

This project is a very straightforward guide for converting an old PC power supply box with a cooling fan into an AC powered, activated carbon fume extractor. After coming across a similar guide for the poor man's fume extractor on Instructables (which consisted of little more than the gutted power supply itself), I decided to add activated carbon and a few other things to make the power supply fit my situation. The innards will vary from power supply to power supply, so I will not provide any precise measurements, just outline the steps. Down to business...

Step 1 — Re-purposed Power Supply Fume Extractor



- First things first: choose a power supply to work with. I was too eager to crack open the one I chose to remember to take a picture before modifications. Pretty much any old power supply will work, just a few things to note:
  - The bigger the fan, the better
  - Pay close attention to any openings in the unit's frame. Ideally, you want one opening for intake (with the fan) and one for exhaust.
- After deciding on a power supply to use, separate the two halves of the frame and remove the PCB. It just took a few screws to lift out the one I have pictured.
  - As always, use caution when taking your unit apart. There are many high-voltage capacitors on the board, so don't go blindly stabbing around with your screwdriver.

Step 2

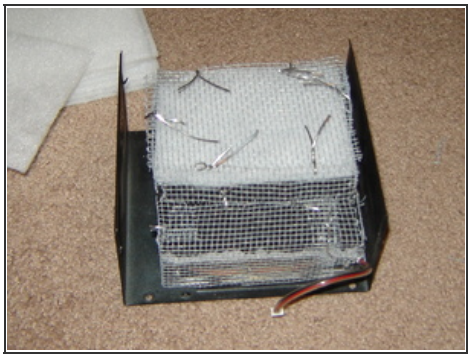
- Now we want to make the housing for the activated carbon filter. Note in the pictures that I kept the power connector for the fan; I took the female counterpart off the PCB from the last step, too.
- I used mesh from a screen door (ask the folks at your local hardware store) because of its rigidity and the small spacing between the wires. I found it rather easy to bend the screen and have it keep the shape.
- Use thin-gauge aluminum wire to attach adjoining edges.
- I had to add a fold to make space for the power outlet (see Step 4).
- I left the power switch [circled] attached to the frame because I figured it would make a convenient on/off switch for my new fume extractor.

Step 3



- I cut sections of air vent filters to fit the space allowed by the mesh cage and completely separate the fan from the carbon.
- You can pick up activated carbon at your local pet or aquarium supply store. I chose pellets that were much larger than the spacing of the door screen.

Step 4



- Add another layer of filter and close it up with more screen and wire.
- I used some small nuts & bolts to attach a strip wood panel for the DC power jack. [Luckily, the power supply I chose already had a nice switch on it, which I just de-soldered and wired to the power jack.]
  - Note the female connector for the fan's power cord [circled]. This completes the tiny circuit.
- All that's left to do is to plug the fan part into the switch part and carefully reassemble the housing.
  - Mind the polarity of the DC current with respect to the direction of the fan's rotation. You want the fan to be pulling air toward it, through the carbon filter.